

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/Ala Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006575**Date Inspected:** 21-Apr-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1845**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 645**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

<b>CWI Name:</b>	Wang Chuan Qing, Li Jin, Sun Bo			<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes	No	N/A	<b>Rod Oven in Use:</b>	Yes	No N/A
<b>Electrode to specification:</b>	Yes	No	N/A	<b>Weld Procedures Followed:</b>	Yes	No N/A
<b>Qualified Welders:</b>	Yes	No	N/A	<b>Verified Joint Fit-up:</b>	Yes	No N/A
<b>Approved Drawings:</b>	Yes	No	N/A	<b>Approved WPS:</b>	Yes	No N/A
				<b>Delayed / Cancelled:</b>	Yes	No N/A

**Bridge No:** 34-0006**Component:** Tower and OBG Components**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector George Goulet was present during the times noted above for observations relative to the work being performed.

**Bay 10**

This QA Inspector, George Goulet, randomly observed the following work in progress in Bay 10:

FCAW welding of weld joint SSD1-FDFA3-1B/C-43, 44 located on PCMK south tower, lift 3, skin D. Welders were identified respectively as 040343, 053869. ZPMC QC was identified as Wang Chuan Qing (QC1). The welding variables recorded by QC1 appeared to comply with WPS-B-T-2332-Tc-P5-F.

**Bay 11**

This QA Inspector, George Goulet, randomly observed the following work in progress in Bay 11:

SAW welding of weld joint WSD1-FCSA3-2B/C-62A, 50A, 56A located on PCMK west tower, lift 3, skin D. Welders were identified respectively as 044552, 044560, 056975. ZPMC QC was identified as Li Jin (QC2). Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Zhu Liang, who was not a CWI. The welding variables recorded by QC2 and his assistant appeared to comply with WPS-B-T-2221-B-U3c-S-2.

**Bay 9 - PMT**

This QA Inspector, George Goulet, monitored OBG Production Monitoring Test (PMT) #1 for deck panels

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DP512-001 and DP296-001 at Gantry #1. Prior to PMT #1, the magnetic particle test (MT) of the tack welds was noted on the test panel as having been performed by ZPMC MT Inspector Li Zhan Hua. The visual inspection of tack welds and root gap was performed by ABF Representative Lv Yun (ABF), ZPMC CWI Sun Bo (QC3), and this QA Inspector, George Goulet. The start time for welding of PMT #1 was approximately 0036 hours on Wednesday, 4/22/09 and the finish time was approximately 0100 hours. This QA Inspector, George Goulet, randomly verified and documented the welding amperage, voltage and travel speed during the gas metal arc welding (GMAW) and submerged arc welding (SAW) processes, welds 1 thru 4 at the completion of both the GMAW root pass and SAW cover pass. The welds were visually inspected by ABF, QC2 and this QA inspector, George Goulet. QC2 and ABF informed this QA Inspector, George Goulet, that all four welds were acceptable and this QA Inspector, George Goulet, concurred. This QA Inspector, George Goulet, randomly witnessed ZPMC ultrasonic testing (UT) inspector, identified as Tang Xing Chan, perform UT on each of the 500 mm test welds for depth of penetration and conformance. This QA Inspector, George Goulet, selected ten designated locations for macroetch sampling per contract requirements. Each macroetch location was stamped by ZPMC personnel with the number 512, the letter L, and an individual macroetch identifying number for each macroetch. After removal from each of the weld test specimens and polishing of the selected end, the macroetches were evaluated with a 7X optical comparator and a 10X optical comparator and accepted by QC3, ABF, and this QA Inspector, George Goulet.

All ten sample macros appeared to meet requirements and were noted to appear acceptable. See Caltrans U-ribs PMT Inspection Sheet, ZPMC Production Monitoring Test Plate Inspection Report, and Caltrans Macro Etch Log - all dated 4/22/2008 for additional information.

### Summary of Conversations:

As noted above, and QA inspector asked each QC if all the welding variables observed by him appeared to comply with the appropriate WPS, including the preheat requirements according to thickness of the thickest member being welded. Each QC showed this QA Inspector that he was carrying the proper temperature sticks to monitor the minimum and maximum preheat and interpass temperatures and replied that all he observed did appear to comply.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang, 134-8257-0045, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Goulet, George	Quality Assurance Inspector
<b>Reviewed By:</b>	Carreon, Albert	QA Reviewer

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